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10/718,351

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Deon John Potgieter

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EXAMINER

BASICHAS, ALFRED

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Please find below and/or attached an Office communication concerning this application or proceeding.

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/718,351
Filing Date: November 21, 2003
Appellant(s): POTGIETER ET AL.

Mark O. Loftin
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed May 27, 2008, appealing from the Office action mailed December 11, 2007.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is incorrect. A correct statement of the status of the claims is as follows:

Claims 1, 2, 4, 10-12, 21 and 24 have been labeled as amended subsequent to the final rejection. However, the appendix listing of the claims does not show any changes.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is deficient. 37 CFR 41.37(c)(1)(v) requires the summary of claimed subject matter to include: (1) a concise explanation of the subject matter defined in each of the independent claims involved in the appeal, referring to the specification by page and line number, and to the drawing, if any, by reference

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characters and (2) for each independent claim involved in the appeal and for each dependent claim argued separately, every means plus function and step plus function as permitted by 35 U.S.C. 112, sixth paragraph, must be identified and the structure, material, or acts described in the specification as corresponding to each claimed function must be set forth with reference to the specification by page and line number, and to the drawing, if any, by reference characters. The brief is deficient because the above requirements have not been satisfied.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

3,982,910

HOUSEMAN

9-1976

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1, 2, 5, 9, 11, and 12 (as understood) are rejected under 35 U.S.C. 102(b) as being anticipated by Houseman (3,982,910), which shows all of the claimed

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limitations. Houseman discloses, among other things, a method of combustion including establishing a combustion zone 56 spaced from a fuel nozzle and defined by a flame of ignited hydrogen (see at least fig. 5), dispersing a liquid primary fuel through the nozzle into the zone of combustion in a partially vaporized and atomized state (see at least col. 2, lines 12-23, and fig. 6), and burning the vaporized and atomized liquid primary fuel entering the zone of combustion. Houseman further shows rotating the hydrogen flame (see at least fig. 6) with discharge openings radially spaced from the longitudinal axis and angled toward the central axis, wherein the combustion zone is defined by a conical surface symmetric about the longitudinal axis (see at least fig. 5,6), and wherein water or steam is added and mixed with the fuel to reduce soot (see at least the Background section). Houseman further shows inwardly directed intersecting flames 74,76 (see at least fig. 6). It should also be noted that the term “mechanically” is afforded its broadest reasonable interpretation and is satisfied by Houseman.

Claims 3, 4, and 6 (as understood) are rejected under 35 U.S.C. 103(a) as being unpatentable over Houseman (3,982,910), which discloses substantially all of the claimed limitations. Nevertheless, Houseman does not specifically recite the claimed speed and range. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have incorporated the claimed speed and range into the invention disclosed by Houseman, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable values and ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

(10) Response to Argument

Appellants assert that the terms “first” and “second” are not new matter because the specification provides ample evidence that the two zones to which these terms have been attached are distinct. The examiner disagrees with appellants' narrow reading, and contends that one of ordinary skill in the art would not have excluded the invention taking place in a single zone.

Appellants assert that Houseman fails to anticipate the claimed invention because the two zones recited in the claims are distinct. The examiner disagrees and believes that one having ordinary skill in the art would not exclude the two zones overlapping and occurring at the same time and place.

Appellants further assert that Houseman fails to anticipate the claimed invention because the instant application includes nozzles that point toward the axial center. Nevertheless, this recitation is not found in the claims, and Houseman clearly shows the claimed recitation of radially inward directed intersecting flames 74,76 as shown in at least figure 6. Also, even so some of the flame would naturally be directed inward.

Appellants further assert that Houseman fails to anticipate the claimed invention because the claims require burning hydrogen gas and only hydrogen gas. Nevertheless, the claims do not exclude other gasses. The claims recite the term “comprising”, which is open ended.

Appellants further assert that Houseman fails to anticipate the claimed invention because the claims require external source, but in asserting so Appellants state that there is no hydrogen gas “fed” to the Houseman burner from an external source.

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Nevertheless, the claims recite that the hydrogen is "supplied from an external source", which is inherent. Also, the fact that hydrogen may be one of many constituent gases is not precluded by the claim language, such as external air.

Appellants further assert that Houseman fails to anticipate the claimed invention because the combusting hydrogen flames must be established prior to the spraying of fuel oil. Again Appellants argue limitations not recited in the claims. Also, by Appellants' admission auto-igniting occurs in Houseman, and it is the examiner's position that such a condition satisfies the claimed limitation of ignited by contact.

Appellants further assert that Houseman fails to anticipate the claimed invention because pressurized source of hydrogen is not recited. However, it is clear from appellants' arguments that this term is given an extremely narrow reading to mean generating the hydrogen externally under a positive pressure and connecting the hydrogen generator to the first combustion zone through a plurality of separate conduits from the fuel oil mixture. This is simply not recited in the claims. As admitted to by appellants, as a basic principal of physics, in order for gas to flow in a conduit, it must be subject to a pressure gradient. Accordingly, the hydrogen in Houseman satisfies the claimed recitation.

Appellants further assert that Houseman fails to anticipate the claimed invention because Houseman's device is designed to generate hydrogen, not combust hydrogen, but admit that some hydrogen combusting would occur. Nevertheless, this is sufficient to satisfy the claimed recitation of hydrogen flame, given its broadest reasonable interpretation.

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Appellants further assert that Houseman fails to anticipate the claimed invention because they allege that Houseman does not provide for mechanically rotating the hydrogen flame. Appellants provide the definition of mechanically as "pertaining to, governed by, or in accordance with, mechanics, or the laws of motion." As Housman does not contradict the laws of motion, the claimed recitation is satisfied. Nowhere do the claims recite spinning the nozzles.

Appellants further assert that Houseman fails to teach the claimed invention because the adjusting the speed of the flame would not be obvious. Nevertheless, it is well established the adjusting fuel and oxidant flow effects combustion, and adjusting the flow for optimizing combustion through experimentation well known. A simple example would be the established combustion efficiency of automobile engines running at 55mph. Naturally, the accelerator is pressed to increase the fuel feed and thereby the speed of the vehicle. In this regard, the relationship between fuel and oxidant flow for attaining optimum combustion efficiency is notoriously well known. Accordingly, attaining the optimum rate for any combustion system can be found by way of experimentation.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

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For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,
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Conferees:

/Kenneth B Rinehart/
Supervisory Patent Examiner, Art Unit 3743

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